To develop a framework for analysis of the economics of power quality - in a REPORT that summarizes available information about cost-benefit analysis of PQ

Including to:
- reviewing documentation on PQ econom. Implications
- reviewing methods of assessing costs
- establishing methodology of collecting data
- recommending methodology evaluating costs
- providing indicative costs for specific cases

To create a Web-based bibliography of existing references
ECONOMIC FRAMEWORK FOR VOLTAGE QUALITY

INVOLED PARTIES

PUBLIC NETWORKS → CUSTOMERS → MANUFACTURERS

REGULATION

STANDARDS

TECHNICAL

ECONOMICS

STATISTICS BY ENTITIES

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COMPOSITION
Different PQ solutions have to be carefully analyzed.

**Preceding**

PQ problematic events (disturbances) causes cost at network level and customer (plant) level.

Analysis of PQ costs $\rightarrow$ 2 approaches
- Global $\rightarrow$ to upgrading PQ level
- Individual cases $\rightarrow$ to solving PQ problems

Both cases applied to networks and customers.

Hence $\rightarrow$ need to assessing trade-offs costs between involved parties.

For the purpose of evaluation and assessment:
- It's proposed to separate PQ into two broad classes:
  - quasi-stationary variations
  - discrete events
- It's proposed to consider two economic analysis methods:
  - direct
  - indirect
- It's proposed to consider:
  - deterministic methods
  - probabilistic methods
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ECONOMIC FRAMEWORK FOR VOLTAGE QUALITY

STRUCTURE OF THE REPORT

Chapter 1: Introduction to Economics of Power Quality
Chapter 2: Overview of methodologies for assessment of economic impact – End user perspective
Chapter 3: Overview of existent methodologies for assessment of economic impact – Public distribution network perspective
Chapter 4: Methodology for collecting Power Quality economic data
Chapter 5: Methodology for the economic assessment of power quality solutions
Appendixes
References

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ECONOMIC FRAMEWORK FOR VOLTAGE QUALITY

CHAPTER 1: INTRODUCTION TO ECONOMICS OF POWER QUALITY

1.1.- Scope of this Report
1.2.- Economics of Power Quality for End Users
1.3.- Economics of Power Quality for Power Networks
1.4.- Economics of Power Quality for Society
1.5.- Role of Regulation
1.5.- Overview of the document
1.6.- References
CHAPTER 2: OVERVIEW OF METHODOLOGIES FOR ASSESSMENT OF ECONOMIC IMPACT – END USER PERSPECTIVE

2.1.- Methodology for quantifying the economic impact of voltage dips and short interruptions
2.2.- Methodology for quantifying the economic impact of harmonics
2.3.- Methodology for quantifying the economic impact of other PQ phenomena
   - voltage and current unbalance
   - surges and transients
   - flicker
2.4.- Conclusions
2.5.- References

CHAPTER 3: OVERVIEW OF EXISTENT METHODOLOGIES FOR ASSESSMENT OF ECONOMIC IMPACT – PUBLIC DISTRIBUTION NETWORK PERSPECTIVE

3.1.- Introduction
3.2.- Review of literature and documented methodologies
3.3.- Costs associated with PQ
   - costs incurred by utilities to mitigate PQ
   - costs associated with reliability but not PQ
   - costs for responding to PQ issues
3.4.- Conclusions
3.5.- Summary
3.6.- References
CHAPTER 4: METHODOLOGY FOR COLLECTING POWER QUALITY ECONOMIC DATA

4.1.- Introduction
4.2.- Importance and motivation
4.3 - End-User perspective
4.4.- DNO perspective: data collection
4.5.- Conclusions
4.6.- References

CHAPTER 5: METHODOLOGY FOR THE ECONOMIC ASSESSMENT OF POWER QUALITY SOLUTIONS

5.1.- Methodology
5.2.- Economic analysis of the cost of PQ
5.3.- End-Use PQ solutions
5.4.- Choosing the optimal PQ solution
5.5.- Conclusions
5.6.- References
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RESULTS

The Guide Economic Framework for PQ shall be edited in 2010

A web-based bibliography of existing references on topics of PQ economics is being created